EXHIBIT B

PVC exist. Solvent systems consisting of blends of tetrahydrofuran and cyclohexanone have been found to make cements that are acceptable under the requirements of this specification.

NOTE 1—It is recommended that solvent cements made to this specification *not* be orange since that color is recommended for use with CPVC solvent cement under Specification F 493.

5. Requirements

5.1 *Resin Content*—The PVC resin content shall be 10 % minimum when tested in accordance with 6.1.

5.2 *Dissolution*—The cement shall be capable of dissolving an additional 3 % by weight of PVC 12454-B compound (either powder or granular) or the equivalent PVC resin at 73.4 ± 3.6°F (23 ± 2°C) without evidence of gelation.

5.3 *Viscosity*—Cements are classified as regular-, medium-, or heavy-bodied types, based on their minimum viscosity when tested in accordance with 6.2.

5.3.1 Regular-bodied cements shall have a minimum viscosity of 90 cP (90 MPa·s).

5.3.2 Medium-bodied cements shall have a minimum viscosity of 500 cP (500 MPa·s).

5.3.3 Heavy-bodied cements shall have a minimum viscosity of 1600 cP (1600 MPa·s).

NOTE 2—Refer to Appendix X1 for guidelines in selecting PVC solvent cements for joining different pipe sizes.

5.4 *Lap Shear Strength*—The minimum average lap shear strength, when tested in accordance with 6.3.2, shall be 250 psi (1.7 MPa) after a 2-h curing time, 500 psi (3.4 MPa) after a 16-h curing time, and 900 psi (6.2 MPa) after a 72-h curing time.

NOTE 3—These values should not be used for designing piping joints.

5.5 *Hydrostatic Burst Strength*—The minimum average hydrostatic burst strength, when tested in accordance with 6.3.3, shall be 400 psi (2.8 MPa) after a 2-h curing time.

6. Test Methods

6.1 *Solids Content:*

6.1.1 *Apparatus:*

6.1.1.1 *Ointment Tins* (Style No. 12, 1-oz (30-mL), all metal).

6.1.1.2 *Vacuum Oven.*

6.1.1.3 *Analytical Balance.*

6.1.1.4 *Centrifuge.*

6.1.2 *Procedure:*

6.1.2.1 Stir the sample thoroughly with a spatula before weighing (Note 4). Weigh 3.0 ± 0.5 g of the sample to the nearest 1 mg into a tared ointment tin. Place tin into the vacuum oven (Note 5), and heat at 248°F (120°C) for 45 min +15, −0 min. Discard specimens left in for more than 1 h. The vacuum must be continually in operation to draw off flammable solvents and shall be maintained at 15 mm Hg minimum. Remove the tin from the oven and place in a desiccator until cooled to room temperature. Weigh the tin and dried sample to the nearest 1 mg.

NOTE 4—This material is usually nonhomogeneous and shall be thoroughly stirred before weighing. The weighing shall also be accomplished quickly to avoid loss of solvent by volatilization.

NOTE 5—The use of a vacuum oven is mandatory for drying the specimen, because this oven has neither an exposed heating surface nor an open flame, thus avoiding the danger of flashing. The oven also provides an open vacuum to exhaust solvent fumes.

6.1.2.2 After weighing, dissolve most of the dried sample by adding 15 mL of tetrahydrofuran (THF) to the sample in the ointment tin and stirring with a glass rod for 15 min. Collect the liquid decanted from this step, plus the liquid from the next two steps. Dissolve the remainder with a second addition of 15 mL of THF, followed by a third addition of 5 mL of THF to rinse the ointment tin. Centrifuge the entire volume at 20 000 r/min for 15 min. Discard the supernatant liquid. Add 15 mL of THF to the tube, mix thoroughly, and transfer the tube contents to the ointment tin. Use 2 mL more of THF to wash down the tube, and pour into the ointment tin. Evaporate off the THF in the vacuum oven at 248°F (120°C) for 45 min. Cool in desiccator, weigh the tin to the nearest 1 mg, and calculate the percent of inert filler present in the cement.

6.1.3 *Calculation*—Calculate the percentage of PVC resin as follows:

$$\text{Resin, \%} = [(B - A - D)/(C - A)] \times 100$$

where:

A = weight of ointment tin,
B = weight of tin and specimen after drying,
C = weight of tin and specimen before drying, and
D = weight of inert filler, if present.

NOTE 6—Other methods for determination of resin and inert filler content may be used provided the results of the alternative method are as accurate and consistent as the above method.

6.2 *Viscosity*—Measure the viscosity in accordance with Method B of Test Methods D 1084, except that conditioning to temperature equilibrium only is required. For qualification purposes, use a Model RVF viscometer, a speed of 10 r/min, and the spindle that, by trial, gives the closest reading to center range of scale for the cement being tested. Other speeds are also used for quality control purposes.

6.3 *Bond Strength:*

6.3.1 *Number of Specimens*—A minimum of five specimens shall be tested for each requirement of 5.4 and 5.5.

6.3.2 *Lap Shear Strength:*

6.3.2.1 Cut 1 by 1-in. (25 by 25-mm) and 1 by 2-in. (25 by 50-mm) sections from ⅛-in. (6-mm) thick sheet made from Class 12454-B PVC. One section of each size is required for each test specimen (Fig. 1).

6.3.2.2 Clean the surfaces to be adhered with a cloth

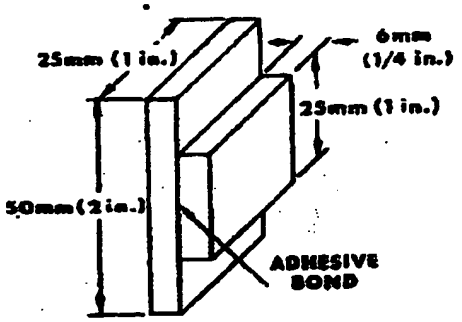

FIG. 1 Compression Shear Specimen

EXHIBIT
C

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